

Form 1449 (Modified)

Information Disclosure
Statement By Applicant

(Use Several Sheets if Necessary)

Atty Docket No.:

IMM1P013B

Application No.:

08/140,713

Applicant:

Louis B. Rosenberg et al.

Filing Date:

August 26, 1998

Group:

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	3,490,059	01/13/70	Paulsen et al.	73	133	06/06/66
JB	B	3,795,150	03/05/74	Eckhardt	74	5.4	12/13/72
	C	3,875,488	04/01/75	Crocker et al.	318	648	02/15/73
	D	4,148,014	04/03/79	Burson	340	709	04/06/77
	E	4,216,467	08/05/80	Colston	340	365L	12/22/77
	F	4,398,889	08/16/83	Lam et al.	434	45	06/08/81
	G	4,436,188	03/13/84	Jones	188	378	11/18/81
	H	4,477,043	10/16/84	Repperger	244	223	12/15/82
	I	4,632,341	12/30/86	Repperger et al.	244	230	02/06/85
JB	J	4,689,449	08/25/87	Rosen	200	6	10/03/86
	K	4,712,101	12/08/87	Culver	340	710	12/04/84

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
							Yes	No
JB	L	4-34610	05.02.92	Japan			X	
JB	M	2254911A	21.10.92	UK			X	
	N	WO9520787	03.08.95	PCT			X	
	O	WO9520788	03.08.95	PCT			X	
JB	P	WO9532459	30.11.95	PCT			X	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Snow, E. et al., "Compact Force-Reflecting Hand Controller," JPL, April 1991, Vol. 15, No. 3, Item No. 153, pp. 1-15a.
JB	S	Howe, Robert D., "Task Performance with a Dextrous Teleoperated Hand System," Proceedings of SPIE, November 1992, Vol. 1833, pp. 1-9.
JB	T	Buttolo et al., "Hard Disk Actuators for Mini Teleoperation", Proceedings SPIE Telemanipulator and Telepresence Technologies, October 31, 1994, pp. 1-8.
Examiner JERRY S. S. : PRIMARY EXAMINED		Date Considered 7-18-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified)

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Atty Docket No.: IMM1P013B

Application No.: 08/140,717

Applicant: Louis B. Rosenberg et al.

Filing Date: August 26, 1998

Group: 2779

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	4,775,289	10/4/88	Kazerooni	414	735	09/25/87
	B	4,800,721	01/31/89	Cemenska et al.	60	393	02/13/87
	C	4,803,413	02/07/89	Kendig et al.	318	648	07/15/86
	D	4,811,608	03/14/89	Hilton	73	862.04	11/06/86
	E	4,839,838	06/13/89	LaBiche et al.	364	709.11	03/30/87
	F	4,874,998	10/17/89	Hollis Jr.	318	568.21	06/21/88
	G	4,879,556	11/07/89	Duimel	341	20	10/26/87
	H	4,896,554	01/30/90	Culver	74	471 XY	04/24/89
	I	4,907,970	03/19/90	Meenen, Jr.	434	45	03/30/88
JB	J	4,961,138	10/02/90	Gorniak	364	200	10/02/89
	K	5,007,300	04/16/91	Siva	74	471XY	01/22/90

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation
	L						Yes No
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	P						

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Kilpatrick, Paul Jerome, "The Use of a Kinesthetic Supplement in an Interactive Graphics System", Univ. North Carolina at Chapel Hill, 1976.
JB	S	Winey III, Calvin Mccoy, "Computer Simulated Visual and Tactile Feedback as an Aid to Manipulator and Vehicle Control," MIT, June 1981.
JB	T	Jacobsen, S.C. et al., "High Performance, High Dexterity, Force Reflective Teleoperator II," ANS Topical Meeting on Robotics & Remote Systems," Albuquerque, New Mexico February 24-27, 1991, pp. 1-10.
Examiner	Date Considered	
JEFFERY M. ENI PRIMARY EXAMINER	7-18-00	

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JUN 26 2000 PATENT & TRADEMARK OFFICE

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	5,044,956	09/03/91	Behensky et al.	434	45	01/12/89
	B	5,095,303	03/10/92	Clark et al.	340	710	03/27/90
	C	5,103,404	04/07/92	McIntosh	318	568.22	12/20/89
	D	5,107,080	04/21/92	Rosen	200	6	12/01/89
	E	5,116,051	05/26/92	Moncrief et al.	273	448B	06/08/90
	F	5,142,931	09/01/92	Menahem	74	471XY	02/14/91
	G	5,143,505	09/01/92	Burdea et al.	414	5	02/26/91
	H	5,182,557	01/26/93	Lang	341	20	11/13/90
	I	5,184,319	02/02/93	Kramer	364	806	02/02/90
	J	5,185,561	02/09/93	Good et al.	318	432	07/23/91
	K	5,186,629	02/16/93	Rohen	434	114	08/22/91

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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	O							
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Kotoku, Tetsuo et al., "Environment Modeling for the Interactive Display (EMID) Used in Telerobotic Systems," IEEE November 3-5, 1991, pp. 99-1004.
JB	S	Bejczy, Antal K., "The Phantom Robot: Predictive Displays for Teleoperation with Time Delay," IEEE 1990, pp. 546-550.
JB	T	Buttolo, Pietro et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," IEEE March 1995, pp. 1-8.
JEFFERY L. WET		7-18-04
PRIMARY EXAMINER		

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	5,220,260	06/15/93	Schuler	318	561	10/24/91
JB	B	5,223,776	06/29/93	Radke et al.	318	568.1	12/31/90
JB	C	5,228,356	07/20/93	Chuang	74	471XY	11/25/91
JB	D	5,264,768	11/23/93	Gregory et al.	318	561	10/06/92
JB	E	5,275,565	01/04/94	Moncrief	434	29	02/23/93
JB	F	5,296,846	03/22/94	Ledley	345	161	10/05/92
JB	G	5,354,162	10/11/94	Burdea et al.	414	5	08/31/92
JB	H	5,389,865	02/14/95	Jacobus et al.	318	568.11	12/02/92
JB	I	5,396,266	03/07/95	Brimhall	345	161	06/08/93
JB	J	5,396,267	03/07/95	Bouton	345	168	01/07/93
JB	K	5,405,152	04/11/95	Katanics et al.	273	438	06/08/93

Foreign Patent or Published Foreign Patent Application

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	N							
	O							
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Tan, Hong Z. et al., "Human Factors for the Design of Force-Reflecting Haptic Interfaces," Tan, Srinivasan, Eberman, & Chang, ASME WAM 1994, pp. 1-11.
JB	S	Ellis, R.E. et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface," ASME Dec. 3, 1993, DSC-Vol. 49, pp. 55-64.
JB	T	Adelstein, Bernard D. et al., "A High Performance Two Degree-of-Freedom Kinesthetic Interface," Mass. Institute of Technology 1992, pp. 108-112.
JEFFERY SNIER PRIMARY EXAMINER		7-18-00

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	Filing Date: August 26, 1996	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	5,412,880	05/09/95	Raab	503	503	08/26/93
	B	5,414,337	05/09/95	Schuler	318	561	06/11/93
	C	5,429,140	07/04/95	Burdea et al.	128	774	06/04/93
	D	5,436,640	07/25/95	Reeves	345	161	11/30/94
	E	5,451,924	09/19/95	Massimino et al.	340	407.1	01/14/93
	F	5,452,615	09/26/95	Hilton	73	862.043	07/22/93
	G	5,459,382	10/17/95	Jacobus et al.	318	568.11	06/09/94
	H	5,512,919	04/30/96	Araki	345	156	03/30/93
	I	5,513,100	04/30/96	Parker et al.	364	167	06/10/93
	J	5,532,585	07/02/96	Oudet et al.	324	207.22	05/20/94
	K	5,576,727	11/19/96	Rosenberg et al.	345	179	06/05/95

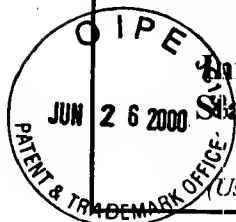
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Colgate J. Edward et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces, September 22, 1993, pp. 1-9.
JB	S	Iwata, Hiroo et al, "Volume Haptization, IEEE 1993, pp. 16-18.
JB	T	Fischer, Patrick et al., "Specification and Design of Input Devices for Teleoperation," 1990.
JEFFERY BRER PRIMARY EXAMINER		7-18-00

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	5,587,937	12/24/96	Massie et al.	364	578	04/25/95
	B	5,589,828	12/31/96	Armstrong	341	20	03/05/92
	C	5,589,854	12/31/96	Tsai	345	161	06/22/95
	D	5,591,924	01/07/97	Hilton	73	862.043	04/23/93
	E	5,623,582	04/22/97	Rosenberg	395	99	07/14/94
	F	5,629,594	05/13/97	Jacobus et al.	318	568	08/16/95
JB	G	5,642,469	06/24/97	Hannaford et al.	395	99	11/03/94
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Rosenberg, Louis B., "The Use of Virtual Fixtures to Enhance Operator Performance in Time Delayed Teleoperation, March 1993, pp. 1-45.
JB	S	Rosenberg, Louis B., "Perceptual Design of a Virtual Rigid Surface Contact," Center for Design Research Stanford University, Air Force Material Command, April 1993, pp. 1-41.
JB	T	Rosenberg, Louis B. et al., "Perceptual Decomposition of Virtual Haptic Surfaces," IEEE, October 1993.
Examiner	Date Considered	
JEFFREY CHEN PRIMARY EXAMINER	7-18-00	

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
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Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Rosenberg, Louis B., "The Use of Virtual Fixtures to Enhance Operator Performance in Time Delayed Teleoperation, March 1993, pp. 1-45.
JB	S	Rosenberg, Louis B., "Virtual Fixtures as Tools to Enhance Operator Performance in Telepresence Environments," SPIE Telemanipulator Technology, March 1993.
JB	T	Rosenberg, Louis B., "Virtual Haptic Overlays Enhance Performance in Telepresence Tasks," SPIE 1994.
Examiner		Date Considered
JEFFERY BRIER PRIMARY EXAMINER		7-18-00

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary) 10	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
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Foreign Patent or Published Foreign Patent Application

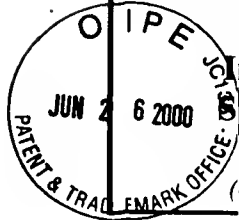
Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Adlestein, Bernard D. et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control Research," 1992, pp. 1-24.
JB	S	Hannaford, Blake et al., "Performance Evaluation of a Six-Axis Generalized Force-Reflecting Teleoperator," IEEE May/June 1991, Vol. 21, No. 3, pp. 620-633.
JB	T	Fisher, S.S. et al., "Virtual Environment Display System," ACM Interactive 3D Graphics, October 1986.
Examiner JEFFERY BRIER PRIMARY EXAMINER		Date Considered 7-18-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
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 GROUP 2779

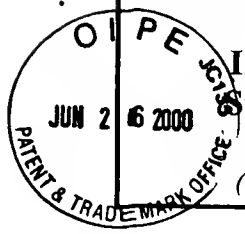
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	"The Personal Digitizer™," Immersion Human Interface Corporation 1994.
JB	S	Minsky, Margaret et al., "Feeling and Seeing: Issues in Force Display," ACM 1990, pp. 235-242.
JB	T	Herndon, J.N. et al., "The State-of-the-Art Model M-2 Maintenance System," Proceedings of the 1984 National Topical Meeting on Robotics and Remote Handling in Hostile Environments, American Nuclear Society, pp. 59-65.
Examiner JEFFERY DRIER PRIMARY EXAMINER		Date Considered 7-18-00

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary) 12	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
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	Filing Date: August 26, 1998	Group: 2779

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U.S. Patent Documents

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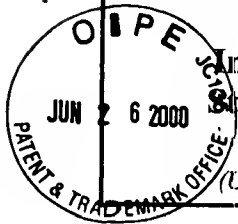
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Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Batter, James J. et al., "Grove-1: A Computer Display to the Sense of Feel," pp. TA-4-188-TA-4-192.
JB	S	Gotow, J.K., et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE 1987, pp. 688-689.
JB	T	Atkinson, William D. et al, "Computing with Feeling," Comput. & Graphics, Vol. 2, No. 2-E, pp. 97-103.
Examiner JERRY ORR PRIMARY EXAMINER		Date Considered 7-18-00

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U.S. Patent Documents

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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Ouh-Young, Ming, "Force Display in Molecular Docking," Chapel Hill 1990, pp. 1-85.
JB	S	Wiker, Steven F. et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size, and Vibrotactile Display Resolution," Proceedings of the Human Factors Society 35th Annual Meeting 1991, pp. 708-712.
JB	T	Tavkhelidze, D.S. "Kinematic Analysis of Five-Link Spherical Mechanisms," Mechanism and Machine Theory 1974, Vol. 9, pp. 181-190.
Examiner JEFFERY ERIK PRIMARY EXAMINER		Date Considered 7-18-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary) 14	Atty Docket No.: IMM1P013B	Application No.: 08/140,719
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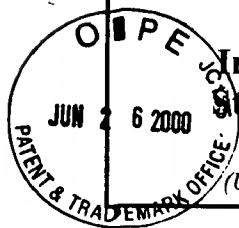
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Slocum, Alexander H., "Precision Machine Design, Prentice Hall, 1992, pp. 661-664.
JB	S	"12-V Voice Coil Motor Driver," Si9961 June 6, 1994, pp. 4-10- 4-16.
JB	T	Schmult, Brian et al., "Application Areas for a Force-Feedback Joystick," ASME 1993, DSC-Vol. 49, pp. 47-54.
Examiner JEFFERY L. ENER PRIMARY EXAMINER		Date Considered 7-18-00

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	Filing Date: August 26, 1998	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Subclass	Filing Date
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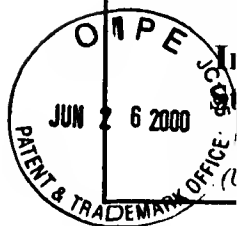
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation	
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	O							
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
<i>JB</i>	R	Russo, Massimo A., "The Design and Implementation of a Three Degree-of-Freedom Force Output Joystick," Dept. of Mechanical Engineering, May 11, 1990, pp. 9-40, 96, 97.
<i>JB</i>	S	Tan, H. et al., "Manual Resolution of Compliance When Work and Force Cues are Minimized," ASME 1993, DSC-Vol. 49, pp. 99-104.
<i>JB</i>	T	Kotoku, Tetsuo, "A Predictive Display with Force Feedback and its Application to Remote Manipulation System with Transmission Time Display," IEEE 1992, July 7-10, 1992, pp. 239-246.
Examiner JEFFERY S. SMITH PRIMARY EXAMINER		Date Considered 7-15-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.: IMM1P013B	Application No. 08/140,713
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
JB	A	3,919,691	11/11/75	Noll	340	172.5	03/26/71
JB	B	4,391,282	07/05/83	Ando et al.	428	660	10/17/80
JB	C	4,560,983	12/24/85	Williams	340	825	09/17/82
JB	D	4,604,016	08/05/86	Joyce	414	700	08/03/83
JB	E	4,677,355	06/30/87	Baumann	318	160	05/27/86
JB	F	4,706,294	11/10/87	Ouchida	381	109	06/10/86
JB	G	4,795,296	01/03/89	Jau	414	5	11/17/86
JB	H	4,823,634	04/25/89	Culver	74	471 XY	11/03/87
JB	I	4,857,881	08/15/89	Hayes	338	128	07/08/88
JB	J	4,868,549	09/19/89	Affinito et al.	340	710	05/18/87
JB	K	4,949,119	08/14/90	Moncrief et al.	364	578	01/12/89

Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation Yes	No
JB	L	EP0085518A1	08/10/83	Europe			X	
JB	M	WO 95/20788	08/03/95	PCT			X	
JB	N	WO 95/32459	11/30/95	PCT			X	
JB	O	WO 96/16397	05/30/96	PCT			X	
JB	P	WO 96/39944	12/19/96	PCT			X	

Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Bostrom, et al., "Design of An Interactive Lumbar Puncture Simulator With Tactile Feedback," 1993 IEEE, 0-7803-1363, pp. 280-286.
JB	S	Akamatsu, et al., "Multimodal Mouse: A Mouse-Type Device with Tactile and Force Display," Presence, Vol. 3, No. 1, Winter 19994, pp. 73-80.
JB	T	Iwata, Hiroo, "Artificial Reality with Force-feedback: Development of Desktop Virtual Space with Compact Master Manipulator," Computer Graphics, Vol. 24, No. 4, Aug. 1990, pp. 165-170.
Examiner: JEFFERY BROWN		Date Considered: 7-18-00

Examiner: Initial citation considered? Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779



U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
JB	A	4,983,901	01/08/91	Lehmer	318	685	04/21/89
JB	B	5,076,517	12/31/91	Ferranti et al.	244	228	08/14/89
JB	C	5,107,262	04/21/92	Cadoz et al.	341	22	10/12/89
JB	D	5,116,180	05/26/92	Fung et al.	414	5	05/03/90
JB	E	5,146,566	09/08/92	Hollis, Jr. et al.	395	275	05/29/91
JB	F	5,189,355	02/23/93	Larkins et al.	318	685	04/10/92
JB	G	5,193,963	03/16/93	McAfee et al.	414	5	10/31/90
JB	H	5,197,003	03/23/93	Moncrief et al.	364	410	04/07/92
JB	I	5,235,868	08/17/93	Culver	74	471 XY	10/02/91
JB	J	5,286,203	02/15/94	Fuller et al.	434	45	10/07/92
JB	K	5,296,871	03/22/94	Paley	345	163	07/27/92

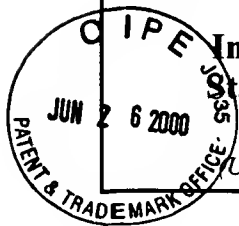
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation Yes	No
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Kelley, et al., "On the Development of a Force-Feedback Mouse and Its Integration into a Graphical User Interface," Symp. on Haptic Interfaces for Virtual Environment and Teleoperator Systems, Int'l Mech. Eng. Congress and Exhibition, Nov. 1994.
JB	S	Hayward, et al., "Design and Multi-Objective Optimization of a Linkage for a Haptic Interface," excerpt from <u>Advances in Robot Kinematics and Computationed Geometry</u> , 1994 Kluwer Academic Publishers, pp. 359-368.
JB	T	Kelley, et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface using an Electromagnetically Actuated Input/Output Device," Dept. of Electrical Eng., Univ. of British Columbia, Oct. 1993.
Examiner: JEFFERY SNEL		Date Considered: 7-18-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary)	Atty Docket No.: IMM1P013B	Application No.: 08/140,711
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
JB	A	5,381,080	01/10/95	Schnell et al.	318	566	02/18/93
JB	B	5,436,640	07/25/95	Reeves	345	187	11/30/94
JB	C	5,473,235	12/05/95	Lance et al.	318	561	12/31/93
JB	D	5,542,672	08/06/96	Meredith	463	37	03/17/95
JB	E	5,591,082	01/07/97	Jensen et al.	463	38	01/05/95
JB	F	5,634,794	06/03/97	Hildreth et al.	434	37	03/23/95
JB	G	5,643,087	07/01/97	Marcus et al.	463	38	07/29/94
JB	H	5,656,901	08/12/97	Kurita	318	436	04/21/95
JB	I	5,666,138	09/09/97	Culver	345	161	11/22/94
JB	J	5,691,898	11/25/97	Rosenberg et al.	364	190	03/28/96
JB	K	5,701,140	12/23/97	Rosenberg et al.	345	156	07/12/94

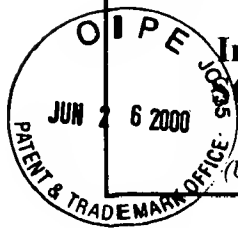
Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation Yes	No
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
JB	R	Millman, et al., "Design of a Four Degree-of-Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," Proc. of IEEE, Int'l Conf. On Robotics and Automation, Apr. 1991, pp. 1488-1493.
JB	S	Hirota, et al., "Development of Surface Display," 1993 IEEE, 0-7803-1363, pp. 256-262.
JB	T	Brooks, Jr., et al., "Project GROPE - Haptic Displays for Scientific Visualization," Computer Graphics, Vol. 24, No. 4, Aug. 1990, pp. 177-185.
Examiner: JEFFERY BRIEN PRIMARY EXAMINER		Date Considered: 7-18-00

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



Form 1449 (Modified) Information Disclosure Statement By Applicant (Use Several Sheets if Necessary) 19	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

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U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
JB	A	5,709,219	01/20/98	Chen et al.	128	782	08/01/95
JB	B	5,714,978	02/03/98	Yamanaka et al.	345	157	12/05/95
JB	C	5,721,566	02/24/98	Rosenberg et al.	345	161	06/09/95
JB	D	5,731,804	03/24/98	Rosenberg	345	156	01/18/95
JB	E	5,734,373	03/31/98	Rosenberg et al.	345	161	12/01/95
JB	F	5,739,811	04/14/98	Rosenberg et al.	345	161	09/27/95
JB	G	5,742,278	04/21/98	Chen et al.	345	156	11/01/95
JB	H	5,754,023	05/19/98	Roston et al.	318	561	10/22/96
JB	I	5,755,577	05/26/98	Gillio	434	262	07/11/96
JB	J	5,767,839	06/16/98	Rosenberg	345	161	03/03/95
JB	K	5,769,640	07/23/98	Jacobus et al.	434	262	08/10/95

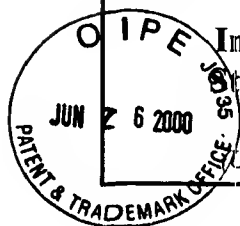
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Examiner: JEFFERY S. BRET PRIMARY EXAMINER		Date Considered: 7-18-00

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Form 1449 (Modified) Information Disclosure Statement By Applicant <i>(Use Several Sheets if Necessary)</i> 20	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

JUN 29 2000

GROUP 2700

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
JB	A	5,781,172	07/14/98	Engel et al.	345	164	06/16/98
JB	B	5,790,108	08/04/98	Salcudean et al.	345	184	10/23/92
JB	C	5,821,920	10/13/98	Rosenberg et al.	345	156	03/28/98
JB	D	5,823,876	10/20/98	Unbehand	463	37	05/03/96
JB	E	5,880,714	03/09/99	Rosenberg et al.	345	156	01/15/97
JB	F	5,889,670	03/30/99	Schuler et al.	364	186	01/11/96
JB	G	5,889,672	03/30/99	Schuler et al.	364	188	06/03/98
JB	H	5,944,151	08/31/99	Jakobs et al.	188	267.1	07/09/96
JB	I	6,004,134	12/21/99	Marcus et al.	434	45	05/19/94
JB	J	6,046,727	04/04/00	Rosenberg et al.	345	156	02/09/99
JB	K	6,050,718	04/18/00	Schena et al.	364	190	01/27/97

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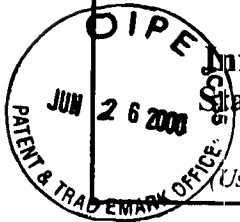
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Examiner: JEFFERY S. GEL PRIMARY EXAMINER		Date Considered: 7-18-00

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Form 1449 (Modified)		Atty Docket No.: IMM1P013B	Application No.: 08/140,717
Information Disclosure Statement By Applicant (Use Several Sheets if Necessary) 21		Applicant: Louis B. Rosenberg et al.	
		Filing Date: August 26, 1998	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-Class	Filing Date
GB	A	6,057,828	05/02/00	Rosenberg et al.	345	56	01/16/97
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Examiner: JEFFERY BRIEN PRIMARY EXAMINER		Date Considered: 7-18-00

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Form 1449 (Modified) Information Disclosure Statement By Applicant <i>(Use Several Sheets if Necessary)</i>	Atty Docket No.: IMM1P013B	Application No.: 08/140,717
	Applicant: Louis B. Rosenberg et al.	
	Filing Date: August 26, 1998	Group: 2779

U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
JB	A	5,784,052	7/21/98	Keyson	345	167	3/12/96
JB	B	6,037,927	3/14/00	Rosenberg	345	156	4/7/97
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Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
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Examiner	<i>Jeffrey A. Brier</i>	
	Date Considered 8-15-00	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.